

Joint STARS

AIRBORNE GROUND SURVEILLANCE

Forward...From the Sea
Extending Maritime Dominance Ashore

Expeditionary Warfare Conference
24 October 2000
W. Shaklee

An Enabling Technology for...

Full Spectrum Dominance

- Dominant Maneuver
- Precision Engagement
- Full Dimension Protection

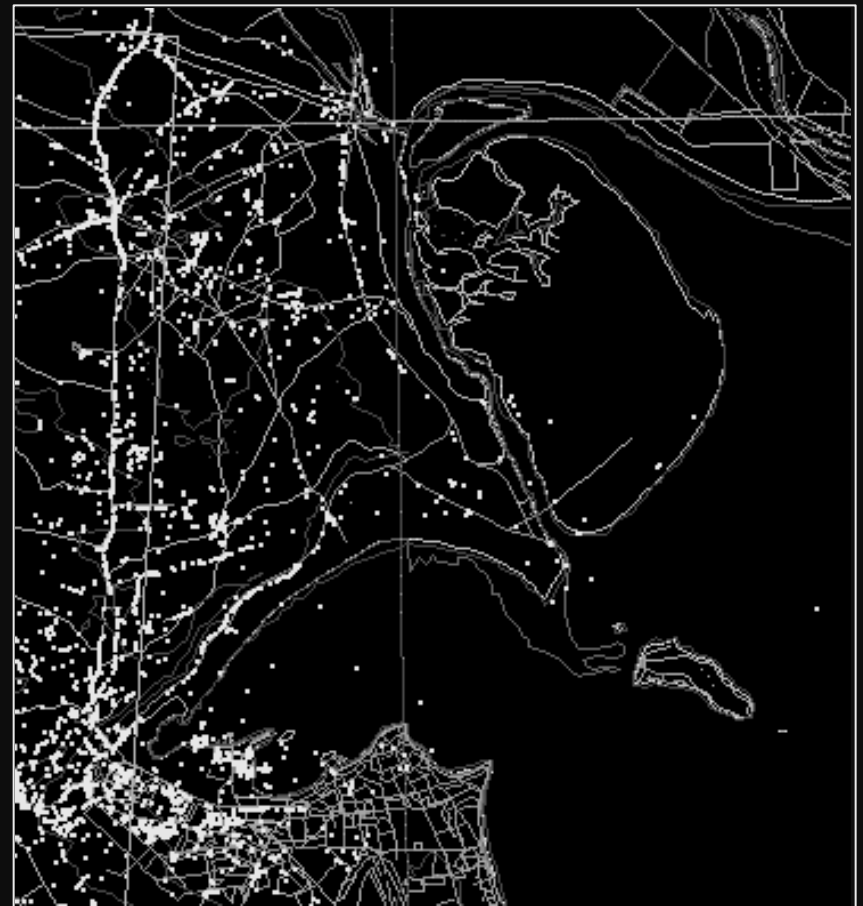


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Warfighter Interests

- Where Is The Enemy?
- What Are They Doing?
- What Has Changed?
- Where Did They Come From?
- Where Are They Going?
- What Is That Dot?

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Changing the Effects of Movement



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Seeing Movement: Key to Battlespace Dominance

- Value Added ...
 - Wide-area MTI Surveillance
 - Integral to IPB & Force Deployment
 - Supports coordinated, simultaneous attacks throughout the Battlespace
 - Provides Force Multiplier effect
 - Increases the effectiveness of Navy Land Attack missions & extends Maritime Dominance ashore



Allows the commander to operate
inside the opponent's decision cycle

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Joint STARS...An Enabling Technology A Joint Program

- Joint STARS
 - U.S. Air Force/U.S. Army
- Northrop Grumman tasks
 - Develop, integrate & test the Airborne Sensor System
- The system provides for:
 - Surveillance & Battle Management
 - Attack Planning
 - Attack Support
 - Post-attack Assessment
- Total System Integration (airborne/ground)



Joint STARS has demonstrated the ability to
effectively support Littoral Operations

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A C2ISR “System of Systems”



Communications



Operations & Control



E-8 Aircraft



Multi-mode Radar



Ground Station

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“The Target-set Capability”

- **Multi-Mode Radar**
 - Moving Target Indicator (MTI)
 - Synthetic Aperture Radar (SAR)
 - Targeting
- **Stand-alone System**
 - On-Board Processing
 - On-Board C2



Ships



Helicopters



SCUD/TEL



**Trucks
(Wheeled)**



**Rotating
Antenna**



**Tanks
(Tracked)**

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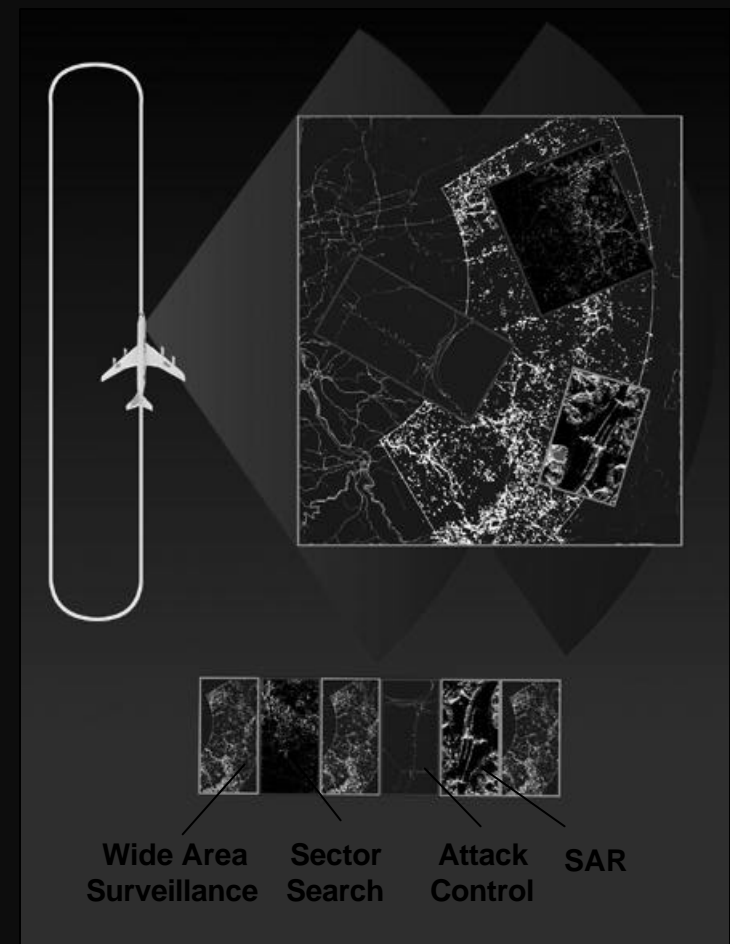


Radar Modes and Products

- Moving Target Indication
 - Wide Area Surveillance
 - Radar referenced coverage area
 - Ground ref. coverage area
 - Sector Search
 - High resolution search
 - Medium resolution search
 - Target Classification
- Synthetic Aperture Radar/Fixed Target Indication

Key to Situational Awareness

- Stand off/coverage area (depth & breadth)
- MDV and Probability of Detection
- Target Location Accuracy
- Beam Revisit Rate

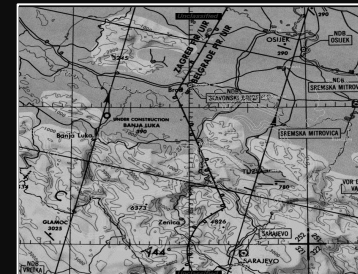


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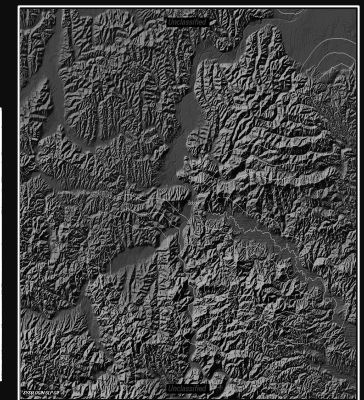


Operations and Control Subsystem

- Performs overall control of all airborne subsystems
- Provides individual utilization of all system capabilities on 18 operator consoles with any combination of functionality
- Manages exchange of radar sensor & intelligence data between the airborne segment & all external elements
- Displays radar imagery & target data with DMA map & terrain features & other tactical information



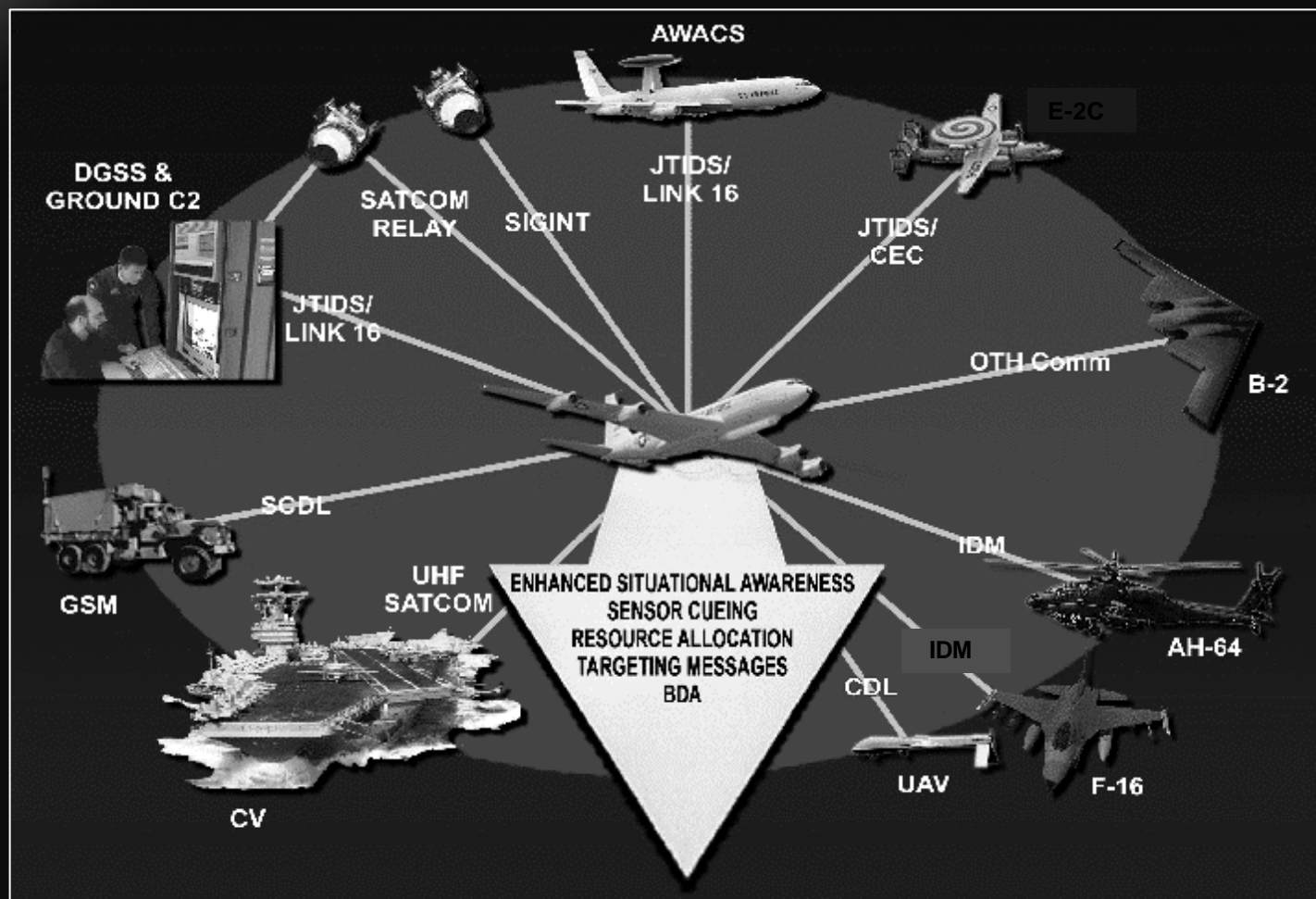
Cartographic Data
(JNC)



Slope
Shading

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Connectivity to Enhance Battle Mgmt & C4I



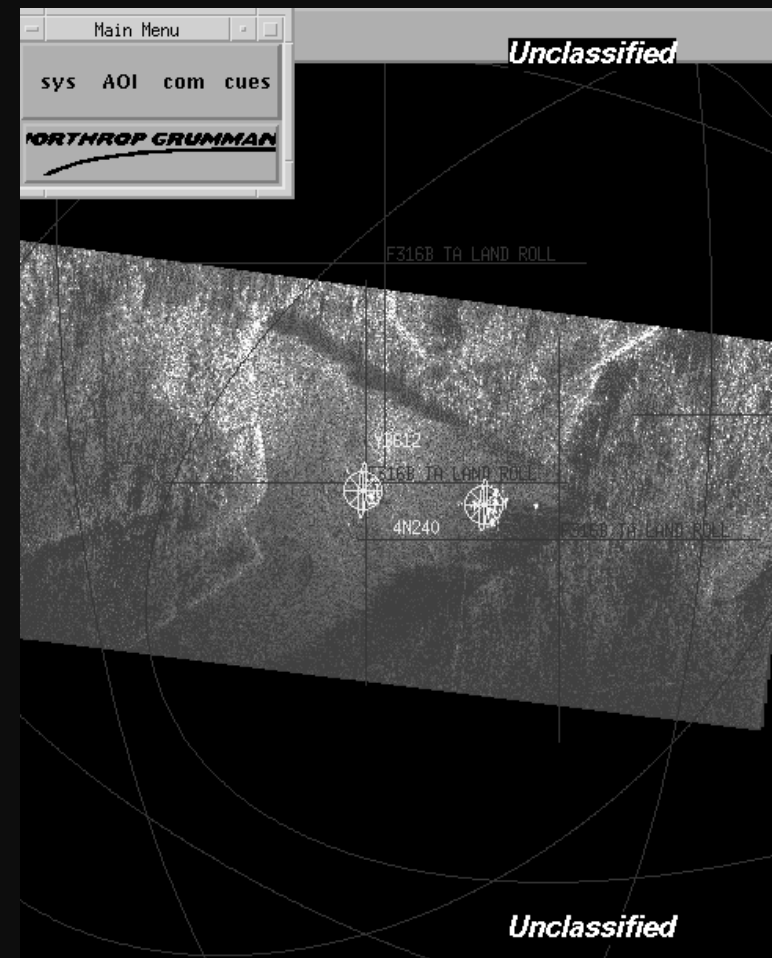
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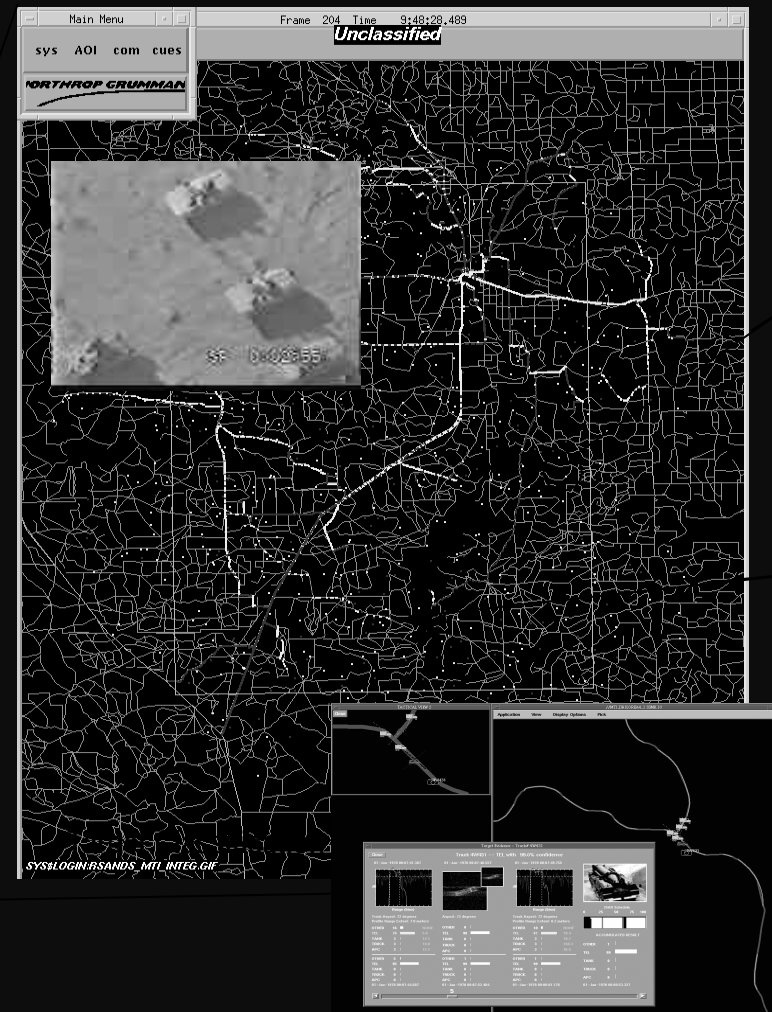


Fusing Onboard & Off-board Battlespace Info

- MTI Movement alerts operator
- Integrates Off-board sensor data
- Correlates with On-board SAR imagery



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Joint STARS...Full Spectrum Dominance

DESERT STORM



"Desert Storm showed that Joint STARS is to the ground battle what AWACS is to the air battle. Both are critical to modern warfare."

Lt Gen Chuck Horner

DOMINANT MANEUVER

PRECISION ENGAGEMENT

FULL DIMENSION ENGAGEMENT

JOINT ENDEAVOR I & II



"Joint STARS demonstrated its capability as a significant force multiplier."

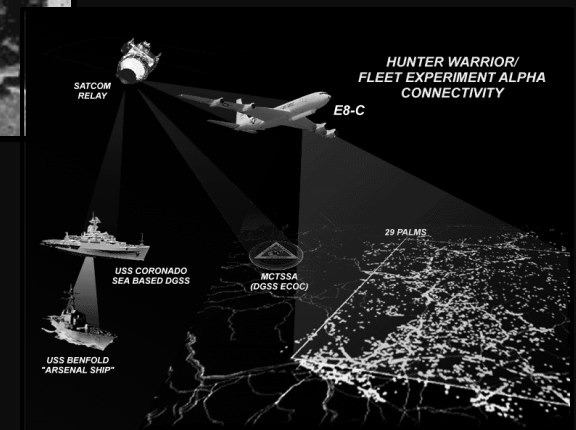
FBE Bravo -

VADM Browne, C3F

FBEs and Joint EXERCISES

"The NATO Commander enforcing the separation has taken to slapping those pictures down in front of the Serbs...saying 'See, you can't do anything we don't know about!'"

Shelia Widnall, Sec AF



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Supporting Navy and Marine Experiments

Demonstrated ability to support:

- IPB during amphibious operations
- Blue Force protection
- Integrated Joint Force operations
- Shaping & integrating the Battlespace
- Power projection & Projecting Defense

"Every situation that comes up, two of the first things asked for are EA-6Bs and JSTARS"- ADM Lopez-9/98

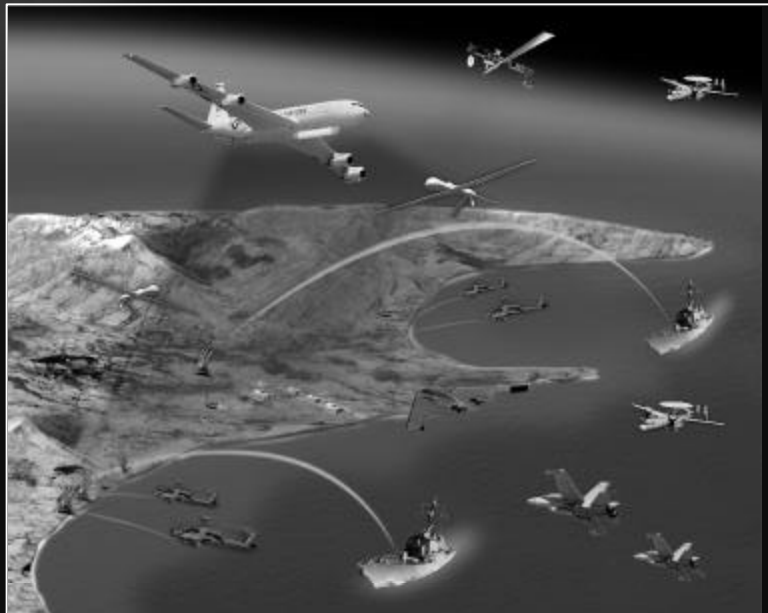


- Mar '97: FBE A/Hunter Warrior
- June '97: USS George Washington
- Apr '97: ASCIET '97
- Nov '97: FBE Bravo
- Nov '97: Foal Eagle
- Mar '99: FBE Echo
- May '00: JTFEX 00-2

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Supporting 2nd Fleet JTFEX 00-2



“Joint STARS information was priceless and needs to be receivable by permanent CV assets...” - NSAWC AAR Jun 2000

- Integrated Remote Joint STARS operator stations (CREWS 2000) on
 - USS Mt Whitney
 - USS George Washington
 - JTASC
- Interfaced with Global Hawk
 - USS George Washington
 - JTASC
- Critical support in successful CSAR
- Coordinated Joint STARS & GH ID of TEL (support of TCS for rapid Command targeting decisions)

“Joint STARS really made an impression on the people on the GW and down here in the Command & Control Center, they saw the value of Joint STARS” - VADM Fallon, C2F



Theater Benefits

- Develops LOC historic data/pattern analysis
 - Identifies pattern changes
 - Identifies ship harbor patterns (potential mine lay-down)
 - Integrated activities with OAMCM systems (ie ALMDS)
- Provides early warning of aggression
- Apply political pressures to deter aggressive actions
- Supports targeting and force maneuvering for Land Attack operations
- Shapes the battlespace/provides a Force Multiplier

Joint STARS provides the situational awareness
to get inside the enemies planning cycle.



Enhancing Operations from the Sea

- The way ahead -
 - Establish connectivity with Joint STARS to fleet and shore based assets
 - Develop appropriate doctrine for effectively integrating Joint STARS into littoral operations
 - Expand training and system familiarity via simulation and more operational participation
 - Support an adequate Joint STARS force structure to meet Global Naval Force Presence

“Joint STARS, more than any other system, can extend maritime dominance ashore as the Navy’s contribution to dominant maneuver and ... precision engagement” - RADM J.S. Redd

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Enhancing Operations from the Sea

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